

## 1. Applicant Information

### Principal Applicant's Contact Information:

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## 2. Overview

### **Descriptive Title — Building the Canadian Statistics Educator Network**

#### **Intended outcomes**

Upon completion of this project my intention is to have the online Canadian Statistics Educator Network (CSEN) fully functional and active with the following features:

- An asynchronous discussion forum to exchange ideas and experience,
- A directory with contact information (secure to avoid free access on the internet),
- An announcement section to post important upcoming events,
- Capability to upload resources such as documents and links to websites, and
- Access to a wiki space to facilitate collaborative efforts among educators.

A Work Study student (see OSAP website) is currently compiling an extensive list of faculty who teach introductory statistics courses at all Canadian universities and colleges. To help guide development of the CSEN and to raise awareness of this initiative, all educators on this list will be invited to participate in an online survey to gauge interest and solicit suggestions about CSEN features. Everyone who is involved with the teaching of introductory statistics (i.e., first- and second-year courses) will be eligible to join the CSEN. Once this network is established, we can consider extending it to educators of higher-level statistics courses.

An educational researcher colleague of mine recommended Smart-Survey (see Smart-Survey website) to conduct the initial survey. My institution's Information Technology Services (ITS) department suggested WebCT (see Blackboard website) as a good candidate interface for the CSEN. It is easily customizable and members will likely already have experience with WebCT or a similar system. If not, they may need to familiarize themselves with one anyway to incorporate technology in their courses. This environment will be available for use free of charge on a continuing basis. ITS will not be directly involved with the programming but are willing to answer questions during the development phase. The anticipated timeline of project activities is as follows:

Fall 2009: **1.** design online survey & obtain approval from research ethics board, **2.** conduct online survey & summarize survey results, and **3.** review literature on implementation of online communities.

Winter 2010: **1.** plan, program & test the CSEN WebCT environment, **2.** write brief instructions for the system, and **3.** ITS will develop dynamic enrollment software.

Spring/Summer 2010: **1.** invite Canadian statistics educators to join the network, **2.** design a one-page advertisement and advertise the network through our departmental website & via email to Canadian postsecondary Institutions, and **3.** introduce the CSEN at the 2010 Statistical Society of Canada Annual Meeting.

## **Rationale**

There is currently no forum that facilitates networking among Canadian postsecondary statistics educators. In fact, most of us are not aware of others with similar professional interests within Canada and even within our own regions. I recently participated in the 2009 United States Conference On Teaching Statistics (USCOTS 2009) in Columbus, OH. Along with the several hundred American educators, a few from Canadian universities and colleges were also able to attend. Based on conversations with Canadians at this conference and elsewhere, there seems to be a widespread feeling of isolation. We are scattered between, and since statistics educators are not necessarily confined to statistics departments, even within institutions. Although there are a few large international and American statistics teaching conferences every 2 to 4 years, time and travel costs involved can be prohibitive. I am confident that the opportunity to interact with others in Canada with similar interests will help compel faculty to join. It may even spark regional professional development activities so cost and time constraints will be less of an issue.

There are a number of internet resources currently available to statistics educators. The Consortium for the Advancement of Undergraduate Statistics Education (see Causeweb website) is an American initiative that maintains a website containing a wealth of teaching and statistical educational research resources. Professional organizations such as the Statistical Society of Canada and the American Statistical Association have sections dedicated to statistical education at all levels (see ASA and SSC websites) and post links to online resources for members. The International Association for Statistical Education (see IASE website) which is based in the UK posts a directory of members as well. Also in the UK, The Royal Statistical Society Centre for Statistical Education (see RSSCSE website) and The Maths, Stats, & OR Network (see

MSOR website) provide and link to statistics education resources for all levels of instruction. “Isolated Statisticians” (see isostat website) operates an email listserv primarily for American statisticians who do not have easy access to colleagues to talk to about their statistics research and teaching. The key features that make the CSEN unique are the interactive nature of the network and the initial recruitment of statistics educators from all Canadian universities and colleges. Everyone involved in teaching introductory postsecondary statistics courses in Canada will be eligible. Participation will be voluntary and no paid membership will be required to join.

I anticipate the CSEN will enhance statistics educational development practice at local, provincial and national levels by:

- fostering a sense of community among Canadian statistics educators,
- facilitating collaboration among faculty from different departments and institutions, encouraging critical reflection on statistics instruction and curriculum discussions,
- increasing awareness of the EDC among practitioners and supporting educational development activity within statistics,
- promoting scholarly statistics teaching by delving into the literature with others, and
- encouraging collaborations in statistics education research and therefore, SoTL.

The CSEN project is in line with the 5-year EDC Professional Development Plan (2005-2010) because it will create an environment that should help motivate scholarly teaching activity and SoTL among Canadian statistics educators and support the sharing of best practices and discussions around course and curriculum objectives. Even the act of conducting the initial survey should raise awareness of statistics education development in Canada and hopefully inspire educators to become actively involved with the CSEN once established.

### **Scholarship**

The CSEN is essentially a community of practice (CoP). Wenger et al. (2002) define a CoP as a group “of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis.” A CoP can consist of many but it is usually a core group of active individuals who strengthen the community with their enthusiasm for the area. (Wenger and Snyder, 2000) CoPs are “driven by a desire and need to share problems,

experiences, insights, templates, tools and best practices.” (Molphy et al. ,2007) With the advancement of technology there are many ways to virtually connect faculty, both within and outside an institution (Sherer et al, 2003). Johnson (2001) notes that lack of face-to-face communication may even be advantages because interactions do not need to conform to the norm behavior of traditional groups. Nagy et al. (2006) in their experience with a large online CoP for radiologists advise that a self-sustaining online CoP requires an initial investment on the part(s) of an individual or a team to construct and nurture it. Their community has enjoyed success and has even resulted in the creation of several local groups who collaborate face-to-face (Nagy et al., 2006).

Even if people indicate interest when surveyed, will they actually participate when the CSEN is developed? McLure Wasko and Faraj (2000) conducted a survey on people who actively posted in three Usenet technical newsgroups over a seven-week period to find out what motivates people to voluntarily participate in online forums. These newsgroups operate similar to asynchronous discussion boards in WebCT. They received responses from 342 posters and found that the most reported reason for participation was “giving back to the community in return for help” (McLure Wasko and Faraj, 2000). Generally, they found that survey respondents were interested in exchanging ideas and being part of the community and that providing assistance to others brought them satisfaction. Also, these online communities seemed to be particularly beneficial to people who are isolated from others in their practice.

In a review of online CoP literature, Johnson (2001) identified attrition as a leading challenge to the communities. To reduce this, Haythornthwaite et al. (2000) suggest the use of an assortment of online tools to promote communication. WebCT offers a variety of communication tools (e.g., email, asynchronous discussion boards, wikis, wimba, etc.) and Molphy et al. (2007) reported the successful use of Blackboard, which is related to WebCT, for the online CoP described in their paper. Therefore, WebCT seems to be a sound choice for the CSEN environment.

Sherer et al. (2003) claim that developing an online mechanism to help “expand knowledge and learning opportunities for faculty, individually and collegially, both within and outside the institution, can enhance professional effectiveness in teaching and

learning". I anticipate the proposed CSEN will facilitate professional development activities in teaching and SoTL which will hopefully lead to improved postsecondary statistics instruction in Canada.

### **Dissemination**

Electronic CSEN invitations will be sent to statistics educators and advertisements sent to Canadian postsecondary institutions. The CSEN will be presented at the Statistical Society of Canada's 2010 annual meeting (May 23-26). Information will be posted on my departmental website and appropriate organizations such as the Statistical Society of Canada will be approached to advertise it on their website(s).

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**3. Budget**

<b>A.</b> (Graduate) Student Assistant Salary: \$20/hour x 200 hours	\$4,000 <sup>1</sup>
<b>B.</b> Benefits: 4% vacation pay & 13% of pay for gov. remittances	\$680
<b>C.</b> Specialized software development (dynamic enrollment app.):	\$500 <sup>2</sup>
- <u>Annual</u> institutional hosting cost (\$50/month):	\$600 <sup>2</sup>
<b>D.</b> Two month subscription to Professional Edition of Smart-Survey:	\$110
- £29.99/month (exchange rate of 1.8253 - Bank of Canada)	
<b>E.</b> Materials, resources & supplies (e.g., printing, long-distance/fax):	\$100
<b>Sub-total</b>	\$5,990
<b>Less:</b> Departmental contribution = 120 Graduate student hours	(\$2,808)
<b>Sub-total</b>	\$3,182
<b>Less:</b> in-kind contributions	(\$100 + \$600) <sup>2</sup>
<b>Total amount requested from the EDC Grant Program</b>	<b>\$2,482</b>

<sup>1</sup> This pay is consistent with departmental graduate student research funding. Estimated hour breakdown: help design/program survey (40 hrs), collect/summarize survey data (20 hrs), literature review (20 hrs), help plan/program CSEN (60 hrs), design ad & instructions (40 hrs), technical support during initial enrolment period (20 hrs).

<sup>2</sup> As is, every new CSEN member needs to be added manually by ITS staff resulting in undue delays and additional cost for ITS staff time. ITS has provided a quote to develop and host dynamic enrolment software. In addition to their \$100 in-kind contribution, upon negotiation, ITS has agreed to permanently waive the \$50/month hosting fee.